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SHEET 1 **BOREHOLE RECORD BH234** OF 4 LOGGED BY ACS CLIENT DMR **CHECKED BY GWB** PROJECT IPSWICH MOTORWAY UPGRADE - WACOL TO DARRA DRILLED DATE 18-Jul-07 to 19-Jul-07 RL 25.85m CONTRACTOR ANGLE GROUND LEVEL Terratest Vertical 32604 E 150393 N **DRILL MODEL** Edson 3000 BEARING LOCATION **DRILLER Brent Ormsby** HOLE DIAMETER 100mm () **ELEVATION DATUM** Australian Height Datum COORDINATE SYSTEM Local Grid DRILLING **STRATA** MATERIAL DESCRIPTION **OBSERVATION** CONDITION SYMBOL CONSISTENCY WATER/ MOISTURE SAMPLE, TEST. EGEND DEPTH SOIL ORIGIN, R.L SOIL TYPE NON BIT. SUPPORT. STRUCTURE, Plasticity / Grain Size, Colour, Minor Components COHESIVE GROUP COHESIVE ETC. ETC. SN ST ST VSJ m 25.82 0.03 **FILL** ASPHALT 25.65 0.20 Sandy GRAVEL fine to coarse grained, brown. **FILL** SP SAND (SP) fine to medium grained, brown. \dots 0.60mm with quartz gravels fine to medium grained, subangular to subrounded, with a trace of clay NONCO 24.35 24.25 1.50 SC CI Sandy CLAY (SC) stiff, fine to medium grained, light brown COHES CLAY (CI-CH) very stiff, mottled red-brown grey, with sand fine grained SPT at 1.8m N 8;14,19 1.70m - 1.95m with ironstained and quartz gravels fine grained. Ironstaining of the clay and ironstone lenses visible in SPT **COHES** 23.35 2.50 Sandy CLAY (CL) hard, fine to coarse grained red-brown, with quartz CL gravels fine grained, sub-rounded to sub-angular COHES SPT at 3.3m N 11;21,19 22.58 3.27 GP Clayey GRAVEL (GP) dense, medium grained, grey-white. NONCO 22.40 3.45 GP GRAVEL (GP) dense, fine to medium grained, grev-white, , 0 0 00 000 **SNDGRV** o O 000 0 21.35 4.50 CI CLAY (CI) firm to stiff, grey-brown, with a trace of sand fine grained and **COHES** SPT at 4.8m 21.07 4.78 SAND (SP) dense, very fine to fine grained, mottled brown grey N 5:15.23 **NONCO** 19.95 5.90 Clayey SAND (SP) medium dense, very fine to fine grained, grey mottled brown. SP **NONCO** SPT at 6.3m 19.55 6.30 N 9:13.12 CI Sandy CLAY (CI) very stiff, very fine to fine grained, grey mottled light brown, with a trace of silt. **COHES** Stiesgingeotechnics/ginthmaster w2d(14.12.07).gpj 3design/geotechnics/gint/gint librarylaus, library_12 (04.10.07).glb (GENERAL BORFHOLE LOG (rev 12Dec07 checked AB/ACP Feb 2006) 2. Made 22Jan08 10:50 18.35 7.50 W SAND (SW) medium dense, fine grained, light brown. NONCO 7.81 CL Sandy CLAY (CL) stiff, fine grained, grey. **COHES** 16.85 9.00 SW SAND (SW) medium dense then dense, very fine to fine grained, grey, SPT at 9.3m N 6;8,8 **NONCO NOTES** JOB Hole Diameter 100mm to 29.95m depth. (Solid Flight Augering to 9m. HW casing to 9.5m. HQ casing to 26.5m. Washboring with 100mm diameter tri-blade bit from 9m to 16.9m, 75mm diameter tri-blade bit from 26m to 29.5m. 86015 NMLC Coring from 16.9m to 26m. Groundwater below 9m.)

CLIENT	DMR											ACS GWB		
PROJECT		ratest	RWA	YUPGI	RADE - WACOL TO DARRA ANGLE Vertical	DRILLED DATE 18-J						07 to 19-Jul-(85m		
DRILL MODEL DRILLER	Eds	son 3000 ent Ormsb	у		BEARING - HOLE DIAMETER 100mm ()			LOCATION				32604 E 150393 N Australian Height Datu		
DRILLING		STRA	TA	MATERIAL DESCRIPTION			CONDITION				1		OBSERVA	
SAMPLE, TEST, BIT, SUPPORT, ETC.	R.L.	DEPTH	GROUP SYMBOL	LEGEND	SOIL TYPE Plasticity / Grain Size, Colour, Minor Components	WATER/ MOISTURE	С	OHE	ONSI	СО	NON OHESI\		SOIL OR STRUCT ETC	
	m	m	SW		SAND (SW) medium dense then dense, very fine to fine grained, grey,	+-	S <	л П	 	-	_∯_ _∰_	9		
		†			with clay. (continued)									
SPT at 10.8m N 13;17,17		Ì												
	-	11			10.80m - 10.95m increase in ironstaining and clay content	-								
		<u> </u>			-	1								
		<u> </u>				-							NONC	
SPT at 12.3m N 16;23,24	-	12			12.00m - 12.26m with gravel fine to medium grained, sub-rounded to]							Nono	
		<u> </u>			sub-angular, with a trace of clay 12.26m - 12.45m sand medium to coarse grained, grey, with clay									
		+				-								
	-	13			- -	1								
		_												
SPT at 13.8m N 8;16,20	12.33	13.52	СН		CLAY (CH) grey-brown, with a trace of silt.	1				П	П	+		
	-	+ - 14			13.80mm possible Joint at 13.8m, 30 degrees, 3mm Fe, PL (low strength ironstone)	1								
		1			- - -]							COHE	
		<u> </u>				-								
SPT at 15.3m N 7;19,27	10.85 -	15 15.00	СН		CLAY (CH) dark grey-brown.	1				,				
		İ			L]								
		 				-								
	-	+ - 16			• -	1							COHES	
		İ]								
SPT at 16.78m		 				-								
N 11;55/250	-	17			16.80mm high strength ironstone band (20mm thick) fine grained angular, light brown	 				J				
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SHEET 3 **CORED BOREHOLE RECORD BH234** OF 4 LOGGED BY ACS CLIENT CHECKED BY **GWB** IPSWICH MOTORWAY UPGRADE - WACOL TO DARRA **PROJECT** DRILLED DATE 18-Jul-07 to 19-Jul-07 CONTRACTOR RL 25.85m Terratest Vertical **GROUND LEVEL DRILL MODEL** Edson 3000 **BEARING** LOCATION 32604 E 150393 N DRILLER Brent Ormsby HOLE DIAMETER 100mm () **ELEVATION DATUM** Australian Height Datum COORDINATE SYSTEM Local Grid **DRILLING STRATA** MATERIAL DESCRIPTION DISCONTINUITIES SPECIFIC GENERAL DESCRIPTION FREQUENCY FLUSH RETURN 9 (TYPE) TCR % (Drill rate) SCR / (RQD Is 50 (MPa) (ber m) SAMPLES CaCO₃, SPT, UCS, **ESTIMATED** LHICKNESS R.L. DEPTH GRAPHIC **ROCK TYPE** ANGLE ROCK Planarity, Roughness, Grain Size, Texture/Fabric, Colour, Minor Components STRENGTH Coating, Infill m 12 13 - 15 8.95 Continued from Borehole 16.90 CORE LOSS: 0.3m (sand coarse grained in drilling 8.65 eotechnics\gin\text{funaster} vZd(14.12.07).gpj sotechnics\gin\text{gint}\gint\text{library_lz} [2 (04.10.07).glb CORE LOG (rev Z2Jan08 checked AB/ACP Feb 2006) Jan08 10.48 MUDSTONE massive, grey. 17.65m - 17.96m nodules of quartz gravels medium grained, red-brown grey 7.89 17.96 18 SILTSTONE very fine grained, massive, light brown XW banded grey. 90/(100) 7.45 18.40 006 SANDSTONE fine grained, massive, light brown banded grey (poorly cemented fine grained RS 19.15m - 19.20m grey sandy clay O ΧW JOB **NOTES** Hole Diameter 100mm to 29.95m depth. (Solid Flight Augering to 9m. HW casing to 9.5m. HQ casing to 26.5m. Washboring with 100mm diameter tri-blade bit from 9m to 16.9m, 75mm diameter tri-blade bit from 26m to 29.5m. 86015 NMLC Coring from 16.9m to 26m. Groundwater below 9m.)

BH234 SHEET 4 **CORED BOREHOLE RECORD** OF 4 LOGGED BY ACS CLIENT CHECKED BY **GWB** IPSWICH MOTORWAY UPGRADE - WACOL TO DARRA **PROJECT** DRILLED DATE 18-Jul-07 to 19-Jul-07 RL 25.85m CONTRACTOR Vertical **GROUND LEVEL** Terratest **DRILL MODEL** 32604 E 150393 N Edson 3000 **BEARING** LOCATION Brent Ormsby **DRILLER** HOLE DIAMETER 100mm () **ELEVATION DATUM** Australian Height Datum COORDINATE SYSTEM Local Grid **DRILLING STRATA** MATERIAL DESCRIPTION DISCONTINUITIES **SPECIFIC** GENERAL DESCRIPTION FREQUENCY WEATHERING TCR % (Drill rate HRETURN TYPE) SCR / (RQD Is 50 (MPa) SAMPLES CaCO₃, SPT, UCS, Ê **ESTIMATED** THICKNESS R.L. DEPTH GRAPHIC **ROCK TYPE** ANGLE (per ROCK TYPE Planarity, Roughness, Grain Size, Texture/Fabric, Colour, Minor Components STRENGTH FLUSH Coating, Infill SPTLS ΥW SANDSTONE fine grained, massive, light brown banded grey (poorly cemented fine grained sandstone). (continued) 4.97 20.88 SILTSTONE very fine to fine grained, massive, grey. **21** _{21.09} 4.76 SANDSTONE fine grained, massive, light brown banded grey 100/(100) 100() 21.90 22.00 3.85 MUDSTONE massive, grey. SANDSTONE fine grained, massive, light brown and 3.46 3.35 SILTSTONE very fine to fine grained, massive, grey. 22.50 SANDSTONE fine grained, massive, light brown and 3.10 22.75 SILTSTONE very fine to fine grained, massive, grey. 2.85 23.00 SANDSTONE fine grained, massive, light brown-grey 2.45 23.40 SILTSTONE very fine grained, massive, grey 2.23 SANDSTONE fine grained, massive, light brown. 1.52 24.33 CORE LOSS: 1.67m (gravels in drilling mud return). 42/(42) 120 25 **26** 26.00 -0.15 SANDSTONE fine to coarse grained sand, with fine to medium grained gravels, angular to sub-rounded, massive, white-grey, (inferred strata from washbore returns and SPT's: poorly cemented sands and odechnicskjintkmaster w2d(14.12.07) gpj rodechnicskjintkjint libraryaus_library_12 (04.10.07) glb CORE LOG (rev ZJJan08 checked AB/ACP Feb 2006) Jan08 10.48 -3.35 MUDSTONE massive, black-grey, (inferred strata from washbore returns and SPT: hard clay(CH)). 9:14.29 -4.10 End of Borehole at 29.95m
Hole Diameter 100mm to 29.95m depth. (Solid Flight Augering to 9m. HW casing to 9.5m. HQ casing to 26.5m.
Washboring with 100mm diameter tri-blade bit from 9m to 16.9m, 75mm diameter tri-blade bit from 29.5m. JOB NOTES 86015 NMLC Coring from 16.9m to 26m. Groundwater below 9m.)

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BOREHOLE PHOTOGRAPHS



PROJECT: Upgrade Centenary Highway CLIENT: Department of Main Roads PROJECT NUMBER: 86015

Hole: BH 234



Depth: 16.9m - 22m



Depth: 22m - 26m